



NSSTC

المركز الوطني لعلوم وتكنولوجيا الفضاء
National Space Science & Technology Center

العین سات - 1 ALAINSAT-1

Mission Objectives

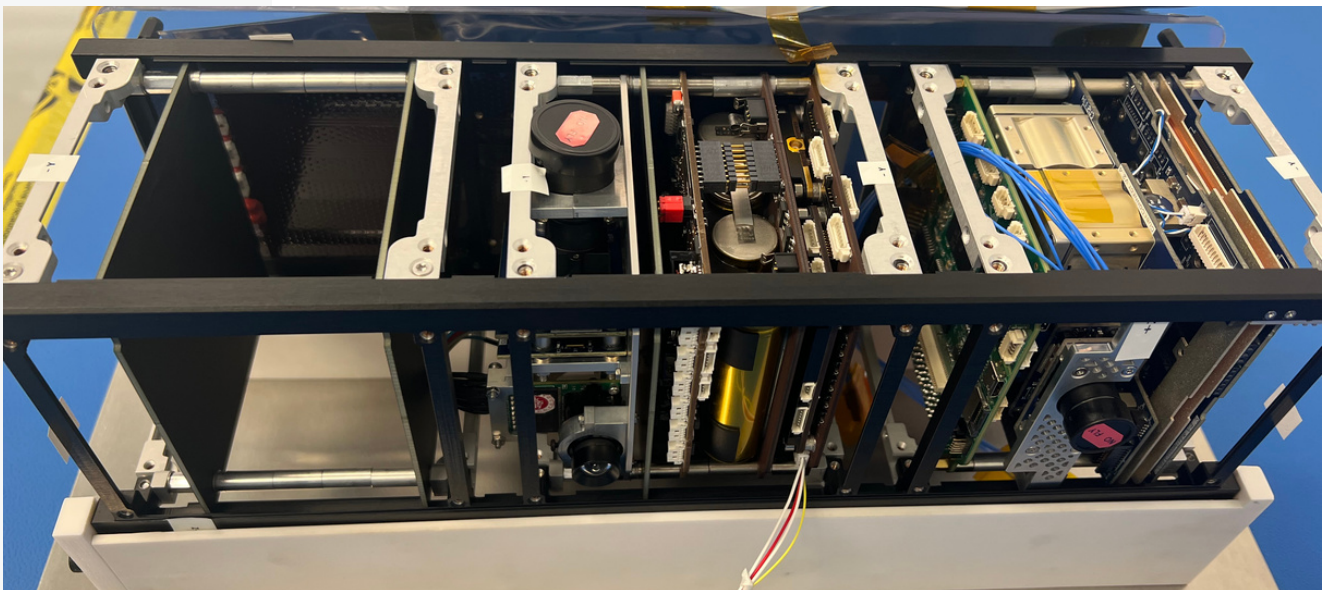
1. Technology Demonstration: Test payloads developed by students from partner international universities.
2. perform Microwave Radiometry (MW) measurements at L-band, vegetation analysis using a Normalized Difference Vegetation Index (NDVI)/Near-Infrared Regions (NIR) camera, and Radio-Frequency Interference (RFI) detection and classification.
3. Take Images using a miniature Multispectral camera.
4. Preform using image classification to autonomously detect the best quality images for downlinking.



Mission Description

AlainSat-1 is a collaboration project between the National Space Science and Technology Center and the IEEE Geoscience and Remote Sensing Society (GRSS) in the form of the 2nd GRSS Student Grand Challenge in order to allow student teams to develop Earth Observation payloads for a small satellite. There are three winning payload teams are:

- **Universitat Politècnica de Catalunya, Spain** will be developing an L-band radiometer for monitoring ice thickness and soil moisture, a multispectral camera for monitoring vegetation, and a software defined radio for monitoring Radio Frequency Interference along with an antenna system.
- **Telkom University, Indonesia** will develop a multispectral camera and a miniature spectrometer for atmospheric sensing.
- **Kyushu Institute of Technology, Japan** will develop algorithms for onboard image classification to automatically detect the best quality images for downlinking.



NSSTC Facilities

- Telemetry and Telecommand of Satellite
- Environmental Testing

ALTITUDE

Low Earth Orbit
Sun Synchronous
orbit
(~ 550km)

Size

3U CubeSat